

Title (en)  
CHARGE PUMP SYSTEMS, DEVICES, AND METHODS

Title (de)  
SYSTEMPUMPENSYSTEME, VORRICHTUNGEN UND VERFAHREN

Title (fr)  
SYSTÈMES, DISPOSITIFS ET PROCÉDÉS DE POMPE DE CHARGE

Publication  
**EP 3583690 A1 20191225 (EN)**

Application  
**EP 18753968 A 20180216**

Priority  
• US 201762460003 P 20170216  
• US 2018000069 W 20180216

Abstract (en)  
[origin: WO2018151853A1] The present subject matter relates to charge pump devices, systems, and methods in which a plurality of series-connected charge-pump stages are connected between a supply voltage node and a primary circuit node, and a discharge circuit is connected to the plurality of charge-pump stages, wherein the discharge circuit is configured to selectively remove charge from the primary circuit node.

IPC 8 full level  
**H02M 3/07** (2006.01)

CPC (source: EP US)  
**B81B 5/00** (2013.01 - US); **B81B 7/008** (2013.01 - US); **B81B 7/04** (2013.01 - US); **G05F 3/205** (2013.01 - EP US); **H02M 3/07** (2013.01 - EP US); **B81B 2203/04** (2013.01 - US); **B81B 2207/053** (2013.01 - US); **H02M 1/0003** (2021.05 - US); **H02M 3/071** (2021.05 - EP)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2018151853 A1 20180823**; CN 110463001 A 20191115; CN 110463001 B 20210820; CN 110463002 A 20191115;  
CN 110463002 B 20230509; EP 3583690 A1 20191225; EP 3583690 A4 20201202; EP 3583691 A1 20191225; EP 3583691 A4 20200805;  
US 10530247 B2 20200107; US 10608528 B2 20200331; US 10658926 B2 20200519; US 10903740 B2 20210126; US 11025162 B2 20210601;  
US 2018314284 A1 20181101; US 2018337595 A1 20181122; US 2019267894 A1 20190829; US 2020220455 A1 20200709;  
US 2020228004 A1 20200716; WO 2018151854 A1 20180823; WO 2018151854 A8 20190328

DOCDB simple family (application)  
**US 2018000069 W 20180216**; CN 201880012099 A 20180216; CN 201880012319 A 20180216; EP 18753968 A 20180216;  
EP 18754059 A 20180216; US 2018000070 W 20180216; US 201815940458 A 20180329; US 201815983123 A 20180518;  
US 201916287857 A 20190227; US 202016735346 A 20200106; US 202016836049 A 20200331